

**COPY OF PAPERS
ORIGINALLY FILED**

File Copy

09/849452

Attached to PAPER No. 6

(Modified) PTO/SB/08A-B (10-96)

Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <small>(use as many sheets as necessary)</small>		Application Number	09/849,452
		Filing Date	May 4, 2001
		First Named Inventor	Michael Lassner
		Group Art Unit	1632-1636
		Examiner Name	Unassigned D. LAMBERTSON
		Attorney Docket Number	02-104910US
		Date Submitted	January 30, 2002

U.S. PATENT DOCUMENTS

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code (if known)		
DJ	AA	6,251,674	B1	Tobin et al.	06-26-2001
DJ	AB	6,303,848	B1	Kumagai et al.	10-16-2001

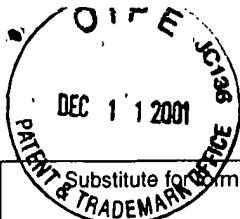
FOREIGN PATENT DOCUMENTS

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
DJ	AC	International Search Report for International Application PCT/US01/14419. Not for publication	

Examiner Signature	David Lemberton	Date Considered	11/12/23
-----------------------	-----------------	--------------------	----------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



(Modified) PTO/SB/08A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

File Copy
09/849,452

Supplied missing copies to paper #6.

Substitute for Form 1449A-B/PTO
INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(use as many sheets as necessary)

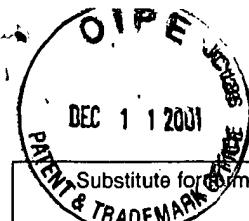
		Complete if Known	
Application Number	09/849,452		
Filing Date	May 4, 2001		
First Named Inventor	Michael Lassner		
Group Art Unit	1632	1636	
Examiner Name	Unassigned	D. LAMBERTSON	
Attorney Docket Number	02-104910US		

U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	U.S. Patent Document Number	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
	AA	5,512,463	Stemmer	04-30-1996
	AB	5,514,588	Varadaraj	05-07-1996
DL	AC	5,605,793	Stemmer	02-25-1997
	AD	5,763,239	Short et al.	06-09-1998
	AE	5,789,228	Lam et al.	08-04-1998
DL	AF	5,811,238	Stemmer et al.	09-22-1998
DL	AG	5,814,473	Warren et al.	09-29-1998
	AH	5,824,469	Horwitz et al.	10-20-1998
	AI	5,830,696	Short	11-03-1998
	AJ	5,830,721	Stemmer et al.	11-03-1998
	AK	5,834,252	Stemmer et al.	11-10-1998
DL	AL	5,837,458	Minushull et al.	11-17-1998
	AM	5,866,363	Pieczonik	02-02-1999
	AN	5,876,997	Krotz	03-02-1999
	AO	5,925,749	Mathur, et al.	07-20-1999
	AP	5,928,905	Stemmer, et al.	07-27-1999
	AQ	5,939,250	Short, Jay M.	08-17-1999
	AR	5,939,300	Robertson, et al.	08-17-1999
	AS	5,942,430	Robertson, et al.	08-24-1999
	AT	5,948,666	Callen, et al.	09-07-1999
	AU	5,958,672	Short, Jay M.	09-28-1999
	AV	5,958,751	Murphy, et al.	09-28-1999
	AW	5,962,258	Mathur, et al.	10-05-1999
	AX	5,962,283	Warren et al.	10-05-1999
	AY	5,965,408	Short, Jay M.	10-12-1999
	AZ	5,985,646	Murphy, et al.	11-16-1999
	BA	6,001,574	Short et al.	12-14-1999

Examiner Signature	David Lambertson	Date Considered	7/21/03
--------------------	------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

RECEIVED



DEC 11 2001

(Modified) PTO/SB/08A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

Substitute for Form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known	
		Application Number	09/849,452
		Filing Date	May 4, 2001
		First Named Inventor	Michael Lassner
		Group Art Unit	1632 - 1636
		Examiner Name	Unassigned D. LAMBERTSON
Attorney Docket Number	02-104910US		

	BB	6,004,788	Short	12-21-1999	
	BC	6,030,779	Short	02-29-2000	
DJ	BD	6,054,267	Short	04-25-2000	
	BE	6,057,103	Short	05-02-2000	
	BF	6,096,548	Stemmer	08-01-2000	
DJ	BG	6,117,679	Stemmer	09-12-2000	
	BH	6,132,970	Stemmer	10-17-2000	
	BI	6,165,793	Stemmer	12-26-2000	
	BJ	6,168,919	Short	01-02-2001	
	BK	6,171,820	Short	01-09-2001	
	BL	6,174,673	Short, et al.	01-16-2001	
	BM	6,180,406	Stemmer	01-30-2001	
	BN	6,238,884	Short et al.	05-29-2001	

TECH CENTER 1600/2900
DEC 13 2001

FOREIGN PATENT DOCUMENTS					
Examiner Initials	Cite No.	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Office	Number	Kind Code (if known)	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
BO	WO	97/07205		Novo Nordisk A/S	02-27-1997
BP	WO	97/20078		Affymax Technologies	06-05-1997
BQ	WO	97/25410		Novo Nordisk A/S	07-17-1997
BR	WO	97/35957		Maxygen, Inc.	10-02-1997
BS	WO	97/35966		Maxygen, Inc.	10-02-1997
BT	WO	97/44361		Recombinant Biocatalysis Inc.	11-27-1997
BU	WO	97/48416		Recombinant Biocatalysis, Inc.	12-24-1997
BV	WO	97/48717		Recombinant Biocatalysis Inc	12-24-1997
BW	WO	97/48794		Recombinant Biocatalysis Inc	12-24-1997
BX	WO	98/00526		Recombinant	01-08-1998

Examiner Signature	David Lambertson	Date Considered	7/21/03
--------------------	------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

O 1
DEC 11 2001
PATENT & TRADEMARK OFFICE
Substitute of Form 1449A-B/PTO

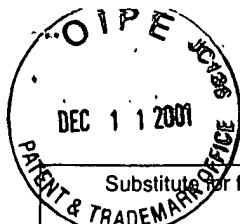
(Modified) PTO/SB/08A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known	
		Application Number	09/849,452
		Filing Date	May 4, 2001
		First Named Inventor	Michael Lassner
		Group Art Unit	1632 1636
		Examiner Name	Unassigned D. LAMBERTSON
Attorney Docket Number	02-104910US		

BY	WO	98/01581		Biocatalysis Inc			
				Recombinant	01-15-1998		
				Biocatalysis Inc			
BZ	WO	98/13485		Maxygen, Inc.	04-02-1998		
CA	WO	98/13487		Maxygen, Inc.	04-02-1998		
GB	WO	98/24799		Diversa Corp.	06-11-1998		
CC	WO	98/27230		Maxygen, Inc.	06-25-1998		
CD	WO	98/28416		Novo Nordisk A/S	07-02-1998		
CF	CE	WO 98/31837		Maxygen, Inc.	07-23-1998		
CF	WO	98/36080		The Dow Chemical Company	08-20-1998		
CG	WO	98/41622		Novo Nordisk A/S	09-24-1998		
CH	WO	98/41623		Novo Nordisk A/S	09-24-1998		
CI	WO	98/41653		Novo Nordisk A/S	09-24-1998		
CJ	WO	98/42832		California Institute of Technology	10-01-1998		
CK	WO	98/48034		Diversa Corp.	10-29-1998		
CL	WO	98/58085		Diversa Corp.	12-23-1998		
CM	WO	99/07837		Diversa Corp.	02-19-1999		
CN	WO	99/08539		Diversa Corp.	02-25-1999		
CO	WO	99/10472		Diversa Corp.	03-04-1999		
CP	WO	99/10539		Diversa Corp.	03-04-1999		
CQ	WO	99/19518		Diversa Corp.	04-22-1999		
CR	EP	0911396A2		Maxygen, Inc.	04-28-1999		
CS	WO	99/21979		Maxygen, Inc.	05-06-1999		
CT	EP	0911396A3		Maxygen, Inc.	05-06-1999		
CU	WO	99/23107		Maxygen, Inc.	05-14-1999		
CV	WO	99/23236		Diversa Corp.	05-14-1999		
CW	WO	99/29902		California Institute of Technology et al.	06-17-1999		

Examiner Signature	<i>David Lambertson</i>	Date Considered	7/21/03
--------------------	-------------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known	
		Application Number	09/849,452
		Filing Date	May 4, 2001
		First Named Inventor	Michael Lassner
		Group Art Unit	-1632- 1634
		Examiner Name	Unassigned D. LAMBERTSON
		Attorney Docket Number	02-104910US

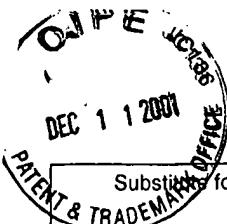
CX	EP	0934999A1	Maxygen, Inc.	08-11-1999	
CY	WO	99/41368	Maxygen, Inc.	08-19-1999	
GZ	WO	99/41369	Maxygen, Inc.	08-19-1999	
DA	WO	99/41383	Maxygen, Inc.	08-19-1999	
DB	WO	99/41402	Maxygen, Inc.	08-19-1999	
DC	WO	99/45154	Diversa Corp.	09-10-1999	
DD	WO	99/57128	Maxygen, Inc.	11-11-1999	
DE	WO	99/65927	Maxygen, Inc.	12-23-1999	
DF	WO	00/42560	Maxygen, Inc.	07-20-2000	
DG	WO	00/42561	Maxygen, Inc.	07-20-2000	
DH	WO	00/53744	Diversa Corporation	09-14-2000	
DI	WO	00/58517	Diversa Corporation	10-05-2000	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
DJ	Chang, C., et al. (1999) "Evolution of a cytokine using DNA family shuffling." <i>Nature Biotechnology</i> 17:793-797.		
DK	Christians, F.C. et al., (1999) "Directed evolution of thymidine kinase for AZT phosphorylation using DNA family shuffling." <i>Nature Biotechnology</i> 17:259-264.		
DL	Coco et al., (2001) "DNA shuffling method for generating highly recombinant genes and evolved enzymes" <i>Nature Biotechnology</i> . vol. 19 pp. 354-359		
DM	Crameri et al., (1993) "10(20)-Fold aptamer library amplification without gel purification." <i>Nuc. Acids Res.</i> 21(18):4410.		
DN	Crameri, A. & Stemmer W.P.C. (1995) "Combinatorial multiple cassette mutagenesis creates all the permutations of mutant and wildtype cassettes." <i>Biotechniques</i> 18:194-195.		
DO	Crameri, A. et al. (1996) "Improved green fluorescent protein by molecular evolution using DNA shuffling." <i>Nature Biotechnology</i> 14:315-319.		
DP	Crameri, A. et al. (1996) "Construction and evolution of antibody-phage libraries by DNA shuffling." <i>Nature Medicine</i> 2:100-103.		
DQ	Crameri, A. et al., (1997) "Molecular evolution of an arsenate detoxification pathway by DNA shuffling." <i>Nature Biotechnology</i> 15:436-438		

Examiner Signature	<i>David Lambertson</i>	Date Considered	7/21/03
--------------------	-------------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Substitution for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known	
		Application Number	09/849,452
		Filing Date	May 4, 2001
		First Named Inventor	Michael Lassner
		Group Art Unit	1632-1634
		Examiner Name	Unassigned D. LAMBERTSON
		Attorney Docket Number	02-104910US

DR	Crameri, A. et al., (1998) "DNA shuffling of a family of genes from diverse species accelerates directed evolution." <i>Nature</i> 391:288-291.
DS	Gates, C.M. et al., (1996) "Affinity selective isolation of ligands from peptide libraries through display on a lac repressor 'headpiece dimer'. <i>Journal of Molecular Biology</i> 255:373-386.
DT	Minshull, J., Stemmer, W.P.C. (1999) "Protein evolution by molecular breeding." <i>Current Opinion in Chemical Biology</i> 3:284-290.
DU	Ness, J. et al., (1999) "DNA shuffling of subgenomic sequences of subtilisin." <i>Nature Biotechnology</i> 17:893-896.
DV	Patten, P.A. et al., (1997) "Application of DNA Shuffling to Pharmaceuticals and Vaccines." <i>Current Opinion in Biotechnology</i> 8:724-733.
DW	Pelletier, Joelle N., (2001) "A Rachitt for our toolbox" <i>Nature Biotechnology</i> vol. 19, p. 314-315
DX	Stemmer, W.P.C. (1994) "DNA Shuffling by random fragmentation and reassembly: In vitro recombination for molecular evolution." <i>PNAS</i> 91:10751
DY	Stemmer, W.P.C. (1994) "Rapid evolution of a protein in vitro by DNA shuffling." <i>Nature</i> 370:389-391.
DZ	Stemmer, W.P.C. (1995) "The Evolution of Molecular Computation." <i>Science</i> 270:1510
EA	Stemmer, W.P.C. (1995) "Searching Sequence Space." <i>BioTechnology</i> 13:549-553
FB	Stemmer, W.P.C. (1996) "Sexual PCR and Assembly PCR." In: <i>The Encyclopedia of Molecular Biology</i> . VCH Publishers, New York. pp. 447-457.
EC	Stemmer, W.P.C. & Soong, N.W. (1999) "Molecular breeding of viruses for targeting and other clinical properties." <i>Tumor Targeting</i> 4:59-62.
ED	Zhang, J. et al., (1997) "Directed evolution of an effective fucosidase from a galactosidase by DNA shuffling and screening." <i>Proceedings of the National Academy of Sciences, USA</i> 94:4504-4509.

Examiner Signature	<i>David Lambertson</i>	Date Considered	<i>7/21/03</i>
--------------------	-------------------------	-----------------	----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.